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| 10/670,095      | 09/24/2003  | Lotfi Hedhli         | 3055-002-02         | 6275             |

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EXAMINER

CHEUNG, WILLIAM K

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1713

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

## Application No.

10/670,095

## Applicant(s)

HEDHLI ET AL.

## Examiner

William K Cheung

## Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-32 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-32, 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0924.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. In view of Amendment filed September 24, 2003, claims 1-11, 33 have been cancelled. Claims 12-32, 34 are pending. Further, the examiner acknowledges the receipt of the response to Restriction Requirement April 15, 2004, and the examiner agrees that when claims 12-32, 34 are found allowable, the non-elected claims 1-11, 33 will be rejoined as new claims

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 12-14, 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Lunkwitz et al. (US 5,540,837) or by Röber et al. (US 5,554,426), each and individually.

*The invention of claims 12-14 relates to a **composition** comprising the polymer product of blending:*

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- a) at least one polymer comprising **acrylic units, vinyl units** or both, and at least one **ionic or ionizable group**; and*
- b) at least one **thermoplastic fluoropolymer**, wherein **a) and b) are different**.*

*The invention of claim 34 relates to a **composition** comprising the **polymer product** of polymerizing a) at least one **polymerizable acrylic, or vinyl** containing monomer, or both, and at least one monomer comprising at least one **ionic or ionizable group**, or both; b) in the **presence of a dispersion** of at least one **fluoropolymer** capable of **dispersing in a medium**.*

Lunkwitz et al. (col. 9, line 55-67) disclose membrane which comprises a PTFE/polyacrylic acid blend prepared by treating PTFE membrane with polyacrylic acid. Since PTFE is a fluoropolymer and polyacrylic acid contain carboxylic acid groups that are ionic or ionizable, Lunkwitz et al. contain all the inventive features of claims 12-14, 34 in a single embodiment. Therefore, the invention of claims 12-14, 34 is anticipated by Lunkwitz et al.

Röber et al. (abstract) disclose a multiplayer plastic pipe which contains a layer comprising a mixture (or a blend) of PVDF and an acrylate copolymer. Further, Röber et al. (col. 3, line 50-55) disclose that the acrylate copolymer contains 0-15 weight % of carboxylic acid ionic or ionizable group. Therefore, Röber et al. contain all the inventive

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features of claims 12-14, 34. Therefore, the invention of claims 12-14, 34 is anticipated by Röber et al.

4. Claims 12-32, 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Prakash et al. (WO 98/22989).

*The invention of claims 12-14 relates to a **composition** comprising the polymer product of blending:*

*a) at least one polymer comprising **acrylic units, vinyl units** or both, and at least one **ionic or ionizable group**; and*

*b) at least one **thermoplastic fluoropolymer**, wherein a) and b) are different.*

*The invention of claims 15-23 relates to a **polymeric ion membrane** comprising a polymer blend, wherein said polymer blend comprises:*

*a) at least one **acrylic or vinyl resin** or both having at least one **ionic or ionizable group**; and*

*b) at least one **thermoplastic fluoropolymer**, wherein a) and b) are different.*

*The invention of claim 34 relates to a **composition** comprising the **polymer product** of polymerizing a) at least one **polymerizable acrylic, or vinyl** containing monomer, or both, and at least one monomer comprising at least one **ionic or***

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***ionizable group, or both; b) in the presence of a dispersion of at least one fluoropolymer capable of dispersing in a medium.***

Prakash et al. (page 7, line 6-17) disclose a membrane composed of a polyblend of sulfonated polystyrene and poly(vinylidene fluoride). Since sulfonated polystyrene is a vinyl resin contain at least one ionic or ionizable sulfonated group, Further, regarding claims 15-23, Prakash et al. (Figure 1-3, 5-16, abstract) clearly disclose the membrane to be used in fuel cell application. Prakash et al. (page 9-11) disclose using methanol which is also a liquid and a hydrocarbon as one of the components in the fuel cell. Regarding claim 19 which claims a membrane comprising a filler, Prakash et al. (page 3, line 1-11) disclose using an inert matrix that does not alter the chemical and thermal properties of the ionomer. Regarding claim 20 which claims a fuel cell comprising a porous support, the examiner has a reasonable basis that the claimed porous support feature is inherently possessed in Prakash et al. because the support of Prakash et al. is an intergral part of the membrane which is also porous. Prakash et al. contain all the inventive features of claims 12-32, 34 in a single embodiment. Therefore, the invention of claims 12-32, 34 is anticipated.

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### Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William K. Cheung

Primary Patent Examiner

May 17, 2004